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CONTINUING EDUCATION FOR SCIENTISTS AND ENGINEERS

Proposal Solicitation

Closing Date: March 3, 1978

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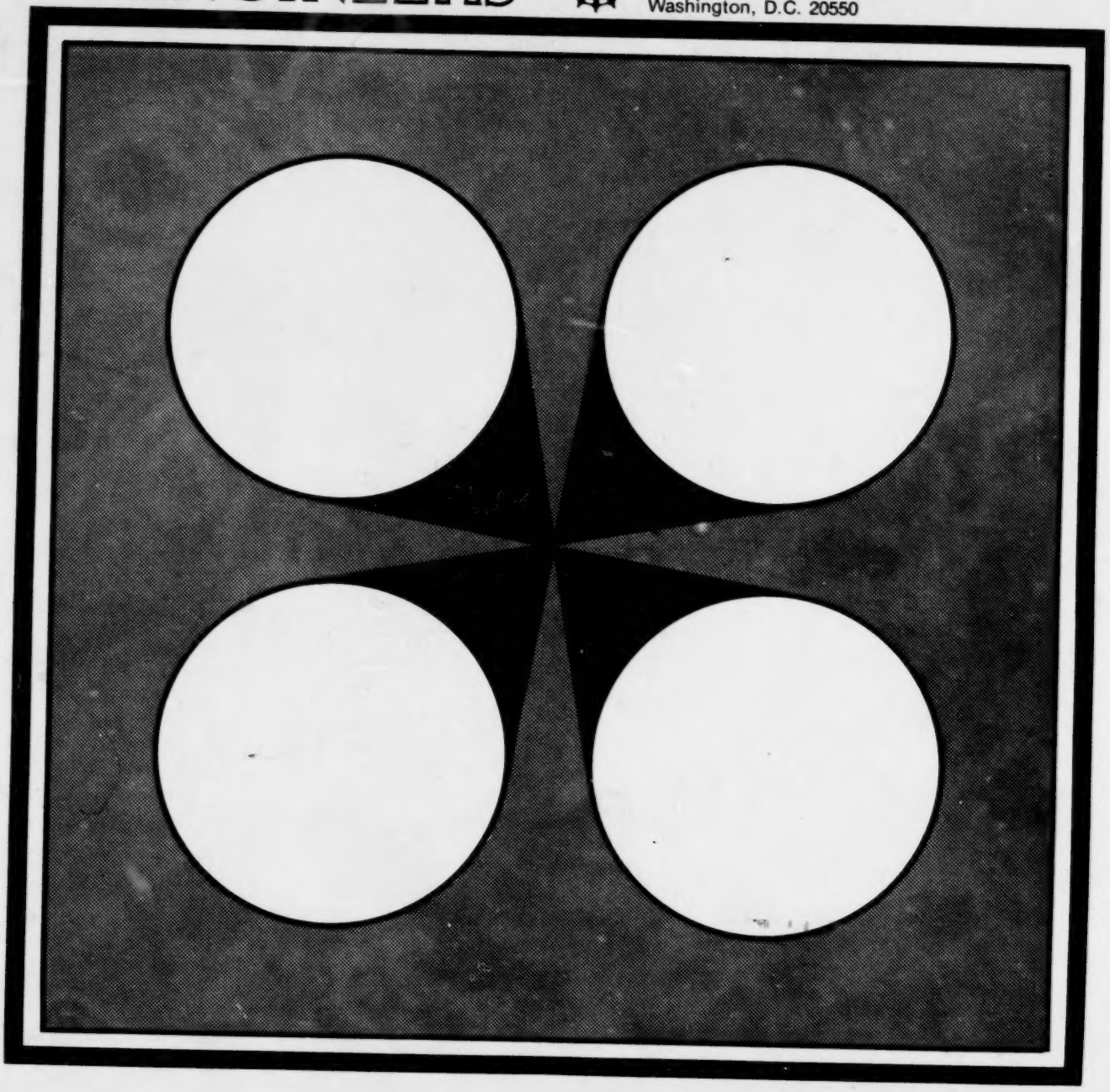
MLC

National Science Foundation
Division of Science Education
Development and Research
Washington, D.C. 20550



IMPORTANT

This booklet contains guidelines for submission of proposals in Continuing Education for Scientists and Engineers (CESE). About $1.0 million is expected to be awarded in Fiscal Year 1978 in CESE.

CESE is one of the activities of the Division of Science Education Development and Research (SEDR).

Other SEDR programs and identification numbers of documents describing them, are

TYCLASE—Two-year College Local Assessment of Science Education ..... SE 78-51

TYCCASE—Two-year College Comprehensive Assessment of Science Education ..... SE 78-52

RISE—Research in Science Education ..... SE 78-55

PROGRAM TIME FRAME

Preliminary proposals for CESE must be received by NSF by 5:00 p.m., E.S.T., March 3, 1978 to insure consideration for Fiscal Year 1978 funding. (See p. 4)

Formal proposals will be due on June 16, 1978. (See pp. 4-6)

To permit adequate planning for review of proposals, prospective proposers are requested to complete and return the post card on the back cover entitled "Intent to Submit." This should be done as soon as the decision is reached to submit a preliminary proposal—by February 1, 1978, if possible. While this notification is not a commitment to submit a proposal, nor an essential prerequisite to submission of a proposal, it provides an advance indication of the number and nature of proposals to be expected, and thus facilitates review.

CONTENTS

I. Goals and Objectives 1

II. A. Scope of CESE Activities 1
Studies 2

Conference/Workshops 2
Experimental/Prototype Projects 3

II. B. Scope of Activities (General)
Fields of Science 3

Organizations Eligible to
Submit Proposals 3
Size and Duration of Projects 3

III. Preparation of Proposals 4

Preliminary Proposals 4
Formal Proposals 4

IV. Submission of Proposals 6

V. Proposal Evaluation 6

Access to Peer Review Information 7

VI. Other Informaton 7

Project Monitoring and Evaluation 7
Reports 7
Changes in Project Operation 7
Time Extensions 8
Distribution Arrangements and
Royalty Income 8
Applicant Organization and
Management Information 8
Acknowledgement 8
Disclaimer 8
Assurance of Compliance with
Civil Rights Act 8
Confidential Aspects of Proposals
and Awards 8
Subcontracts 8
Evaluation 8

VII. Appendices

A. Sample Cover Sheet (Prelim) 11
B. Sample Cover Sheet (Formal) 12
C. Project Summary 13
D. Sample Functional Budget 14
E. Budget Worksheet (Form569) 15

CONTINUING EDUCATION for Scientists and Engineers

I. GOALS AND OBJECTIVES

This document describes and solicits proposals for projects in Continuing Education for Scientists and Engineers—one of the activities in the Division of Science Education Development and Research (SEDR) in Fiscal Year 1978. Approximately $1.0 million is to be provided to CESE projects in the current program year.

The goals of SEDR are to create new knowledge and understanding about science education and to identify, develop, and better understand innovative and practicable technologies, methods, instructional materials, and management practices that are likely to contribute to improvement in the quality, currency, relevance, or productivity of science education, formal or informal,at all levels.

The term "continuing education" has been applied to a wide variety of activities. In its broadest sense it is synonymous with "adult education," ranging over not only many levels of education, but responding to many needs—from the need for detailed knowledge of a specific subject to a desire for recreation. In the context of National Science Foundation activities, however, the term "Continuing Education" (CE) is used to describe a coordinated set of activities closely related to the delivery of education and training programs dealing with the subject matter of science and engineering *to employed engineers and scientists.*

This target group can be separated into two major segments: those whose primary employment is in academic institutions, and those in nonacademic (largely industrial) employment. CESE, for FY 1978, will focus primarily on the nonacademic sector, but will include those areas at the industrial/academic interface. Continuing education for the academically employed will *not* be the concern of CESE; such activity as the Foundation supports for academic scientists and engineers is described in NSF Brochure SE 78-28.

II. A. SCOPE OF CESE ACTIVITIES

There is a wide range of activities that might be encompassed within the limitations described in the preceding paragraph. Which of these represent unnecessary duplication of effort, or which represent cost-effective and catalytic activity productive of improved education, is impossible to predict under present circumstances. Despite the growing importance of continuing education, there is widespread agreement that this is an area about which too little is known and less is understood. In general, the implementation of "action" programs is best preceded by the accumulation of greater knowledge about the existing structure and status of continuing education for scientists and engineers. Equally important is the identification of pressure points at which the application of modest forces can produce multiplicative and sustained improvements. CESE activities for Fiscal Year 1978 will, therefore, have three principle foci:

(1) *STUDIES* oriented toward development of a clear picture of what CE for engineers and scientists employed in the industrial area is, how it functions, how it relates to other aspects of industrial organization, what its problems are, and how a coordinated attack on these problems can be mounted; and a limited number of "action" projects, including

(2) *CONFERENCES* or *WORKSHOPS*

designed to bring about better understanding on the part of both industrial and academic personnel of the academic/industrial engineering and science education interface, and

(3) *EXPERIMENTAL/PROTOTYPE PROJECTS* to carry out proposer-generated activities directly related to CESE FY 1978 objectives.

STUDIES

Among the items of FY 78 interest are well designed projects to generate valid information and/or conclusions about a variety of CE activities or practices. These may center around broadly targeted surveys, or well chosen and representative case studies, or combinations of the two. This includes:

(1) Studies of the *current state* of continuing education programs conducted for the benefit of employued scientists and engineers by their employing companies, by colleges and universities, by professional societies, and by entrepreneurs in the "education business." While individual studies may focus on one or several of these deliverers of continuing education, each study should seek to provide a broad base of information about:

- the magnitude of the enterprise in terms of numbers of participants; numbers, competence, and quality of the delivery staff; and dollar costs;
- the range and effectiveness of delivery modes in use;
- the levels of education provided both for credit and not-for-credit;
- the quality of the program(s) including criteria used to determine quality; and
- the effectiveness of the program(s) in promoting attainment of the goals of employees and employers.

(2) Studies leading to the generation of validated criteria for measurement of the effectiveness of particular techniques or methods of delivery of continuing education.

(3) Studies of the role of organizational climate and motivation in the maintenance of employee vitality, including the influence of management practices on the utility of, and the need for, particular types of continuing education.

(4) Investigations of the possiblity of generating means to enable individual employees to identify and assess their own needs for additional education or training.

(5) Studies related to determining and resolving the problem of delivery of continuing education to small, geographically-dispersed industrial plants—companies employing too few scientists or engineers to make in-plant continuing education programs economically feasible. Part of the problem of providing for the needs of such individuals in a meaningful, economic way is that of knowing the *extent* of the need: the number, type, location, and engineer and scientist populations of small geographically dispersed plants.

(6) Investigation of the learning patterns of adults, with particular emphasis on comparison of learning styles (and appropriate teaching styles) of adult scientists and engineers with their undergraduate and graduate-level counterparts.

(7) Studies of the feasibility of developing methods to assist industrial organizations (or the continuing education divisions of colleges or universities) in assessing the educational needs of their employees (or their clientele) and in designing appropriate responses.

(8) Consideration will also be given to other such studies related to the CE enterprise that contribute to an improved understanding of current activities, or identification of new approaches or mechanisms that can lead to better coordination of activities among the suppliers of continuing education programs.

CONFERENCES/WORKSHOPS

Proposals for partial support of conferences or workshops related to CE will be considered provided that the activity has a specific and clearly described goal and is designed to reach a specific and clearly-stated outcome that will

contribute to improvement in continuing education or to understanding and resolution of an identified problem in CE.

One area, increasingly coming to attention, involves the different perceptions held by academia and industry of the purposes of education in the sciences and engineering, and the relationship of these purposes to national (and student) needs and goals. A limited number of conferences, *local* or *regional*, designed to bring together working-level engineers and scientists from industry and the academic world to bring about mutual understanding of educational problems and needs, will be considered for support.

The rapid expansion of CE by universities has raised questions about its role, management, control, and support within institutions. To examine these and related questions, the Foundation may support a very lmited number of conferences (probably not more than two or three) involving high level university administrators and members of university and industrial policy-making groups.

It is a sine qua non that each proposal include a carefully designed plan for assessing the effectiveness of the conference. Consultation with program staff before submission of a preliminary proposal is recommended.

Consideration will also be given to Conference or Workshop proposals designed to attack other proposer-described CE-related topics falling within the scope of CESE FY 78 interests.

EXPERIMENTAL/PROTOTYPE PROJECTS

Within the limits of the funds available for CESE, the Foundation will consider innovative experimental projects, not falling within either of the two categories listed above, which show promise of promoting broader knowledge and better understanding of continuing education, and which may serve as prototypes for future broad-scale activity in continuing education for scientists and engineers.

II. B. SCOPE OF ACTIVITIES (GENERAL)

FIELDS OF SCIENCE

The Foundation defines eligible "fields of science" to include the mathematical, physical, biological, medical, engineering, and social sciences; the history and philosophy of science, and interdisciplinary fields which are comprised of two or more overlapping sciences. "Practice" fields such as clinical medicine, nursing, clinical psychology, social work, business administration, and the arts and humanities are excluded.

Often activities like formal or informal courses, seminars, conferences, and the like, dealing with interpersonal relations, communication skills, personnel management, business administration, and career planning or management, are understood to be "continuing education" as managed within an industrial organization. While not eligible, per se, for Foundation support, their roles, where applicable, shoud be considered in any studies of the current state of continuing education programs for nonacademic personnel. Questions on eligibility should be resolved by inquiry to the cognizant NSF staff.

ORGANIZATIONS ELIGIBLE TO SUBMIT PROPOSALS

Preliminary proposals may be submitted by *individuals* affiliated with organizations eligible to submit formal proposals. (See below under III. Preparation of Proposals).

Formal proposals may be submitted by colleges and universities on behalf of their staff members, by nonprofit organizations such as professional societies or educational consortia, or by profit-making organizations with specific expertise in the areas identified in this document as of particular interest to CESE.

SIZE AND DURATION OF PROJECTS

Project size and duration should be matched to the requirements of the activity proposed, but in no case will support be provided to a project unless it is clear that successful completion can be reached within 2 years. Proposals for projects of duration greater than 12 months must include time schedules with clearly identified decision points, since projects of duration more than 12

months *may* be funded in a phased or step-wise manner.

TYPES OF AWARDS

Either grants or contracts with fee will be negotiated as appropriate.

III. PREPARATION OF PROPOSALS

Preparation of propsoals will be simplified, and the labor invested reduced, if the proposer is conscious at the outset of the step-wise nature of the FY 78 CESE proposal evaluation procedures. Proposers are to submit by March 3, 1978 a brief PRELIMINARY Proposal which wll be evaluated by staff and outside expert advisers to assess its likely contribution, within a set of supported projects, to the overall goal of the CESE program. Those proposers whose preliminary proposals are viewed as potential contributors to this year's coordinated set of activities will receive, by April 28, 1978, a letter encouraging or discouraging submission, by June 16, 1978, of a complete and definitive FORMAL proposal. The number of formal proposals encouraged will be about twice the number of anticipated awards. Final award decisions will be announced in September 1978.

Proposes sometimes find it helpful to discuss a proposed project with a cognizant NSF staff member prior to prepartation of a preliminary proposal. While the Division of Science Educaton Development and Research welcomes calls and visits, it is desirable to make arrangements for a visit in advance. The Division is located at 5225 Wisconsin Avenue, N.W., Washington, D.C. (not to be used as a *mail* address). Telephone calls can be made to the staff at (202) 282-7900 during office hours, 8:30 a.m. to 5:00 p.m., Monday through Friday.

Written inquiries should be addressed to

National Science Foundation
Washington, D.C. 20550
Attention: SEDR/CESE

PRELIMINARY PROPOSALS

The purpose of the preliminary proposal is to provide Foundation staff and outside reviewers with a general understanding of the rationale for the proposed project, a brief overview of the major line of attack proposed, a clear statement of the expected project outcomes, an indication of proposed project personnel and their qualifications, and a preliminary estimate of budget and time requirements. The next section concerning the content of *formal* proposals, and the later section on proposal evaluation, indicate the *kind* of information to be provided in a preliminary proposal—in general, statements about what is to be done, why, by whom, and to what end, without the necessity for the detaild supporting backup and background information that *will* be an essential part of the formal proposal.

No formal institutional approval is required by the Foundation for submission of a preliminary proposal. However, such a proposal should not be submitted unless the proposer has reason to believe that, if a formal proposal is encouraged, it will receive the approval of the institution.

The title page of each preliminary proposal is to be a reproduction of the Cover Page given in Appendix A. The main body of the proposal is to be on *no more than five* doubled-spaced 8½" x 11" pages, printed on one side only, and stapled in the upper left-hand corner.

Twelve copies of the preliminary proposal, together with three *additional* cover pages, must be received in the Foundation no later than 5:00 p.m., EST, March 3, 1978. They are to be submitted in a single package to:

National Science Foundation,
Washington, D.C. 20550
Attention: SEDR/CESE

FORMAL PROPOSALS

Each formal proposal should contain the following elements, assembled in the order given below.

Cover Sheet—Use the form or reproduction thereof given in this booklet, Appendix B.

Table of Contents—Identify major sections of the proposal to facilitate review and evaluation.

Project Abstract—(Form 4, given in Appendix

C) A clear and simple precis employing minimum technical terminology and accurately describing the proposed activity. State the objectives of the proposed activity and the basic elements of the plan for conducting it. As much detail as is possible, typed single-spaced, should be provided within the space limitations of the form.

Project Summary—No more than 4 double-spaced pages, summarizing the project plan, organization and management plan, and qualifications, experience, and responsibilities of key personnel, as well as the relevance of the expected results to continuing education in engineering and science.

Narratives—Not to exceed 20 double-spaced pages.

Include:

1. *Need for the study*. Provide a statement describing the topic to be addressed and a clear specification of the question to be studied. Proposers are encouraged to present their case for the project activity in light of the deficiencies in existing knowledge or in terms of the expected contribution to the objectives of CESE. Include critical literature references or other evidence of need.
2. *Project goals*, Identify those questions the project is designed to answer and discuss how the results of the activity might lead to more effective practices in continuing education in engineering or science. Indicate any significant policy areas that might be affected by the findings.
3. *Activity Plan*. Describe the procedures to be employed.
   (a) *Design*. The specifics of the plan and indication of the reasons for its selection. State associated advantages and disadvantages over alternatives that might have been selected.
   (b) *Samples*. If surveys are involved, indicate and justify sample selection procedures. For conferences or workshops, indicate and justify particpant selection procedures.
   (c) *Data Analysis*. Where pertinent, describe statistical or other analytic treatments, Include reasons for the selection and limitations on specific techniques.
4. *Schedule of Activities*. Identify project starting date, termination date, and other pertinent or significant progress points. Use milestone charts, or other graphic or verbal presentation techniques which clarify the proposed activity schedule.
5. *Personnel Qualifications*. Briefly describe the education and experience of the principal investigator and other staff and relate these to the proposed project activities. Indicate how the proposed skill mix will help achieve project goals, Include vitae in an appendix.
6. *Organization and management plan*. Specify the proposed structure for operating the project and the responsibilities of key personnel.
7. *Dissemination of Project Results*. Describe the plans for making project results broadly available to the interested public—via publication in appropriate journals, presentations at professional meetings, etc.

Budget/Cost Data—The relationship between expenditures and activities must be detailed in a functional budget that shows the basis for the calculation of each item (See model in Appendix D). In addition, a summary budget should be prepared in accordance with Form 1030, Appendix E.

Other Commitments of Senior Personnel—Each proposal must list all current projects, in addition to the proposed project, to which the senior personnel have commited a portion of their time, whether or not salary for the person involved is included in the budgets of the various projects. This information should include the titles and dates of current grants or contracts, the source of funds, annual budget levels, and the man-months devoted to each project by each of the senior personnel. The proposal must also provide analogous information for all other proposed projects which are being considered by, or which will be submitted in the near future to, other possible sponsors including other Foundation programs. Concurrent submission of a proposal to other organizations will not prejudice its review by the Foundation.

Appendices—Appendix I shall be a copy of the letter inviting the formal proposal, together with a copy of the preliminary proposal.

Appendix II shall contain the curriculum vitae of the proposed project director, and a curriculum

vitae for each additional staff member playing a major role in the project.

Further appendices may be used to provide background or supporting information. It should be kept in mind, however, that reviewer's time is limited and voluminous appendices may not be studied carefully.

IV. SUBMISSION OF FORMAL PROPOSALS

1. Proposals must be received before 5:00 p.m., EST, June 16, 1978.
2. Twelve (12) copies of the complete proposal are required.
3. Two (2) extra copies of the Cover Sheet and Abstract are required.
4. Copy should be double spaced on one side only of 8½" x 11" paper.
5. Pages are to be numbered at the bottom.
6. The original, signed Cover Sheet is the letter of transmittal. Institutional letters of endorsement or transmittal, supporting letters, institutional forms, etc., if included, must be appended to the proposal.
7. Proposal copies are to be assembled in the order shown above, and stapled in the upper left-hand corner, but not otherwise bound.
8. Proposals should be mailed in a single package, securely bound to:

Central Processing Section
National Science Foundation
Washington, D.C. 20550
ATTENTION: SEDR/CESE

V. PROPOSAL EVALUATION

Formal proposal reviewers will be selected on the basis of the skill mixture required to analyze proposed project elements according to the review criteria listed below.

The same considerations, but with lesser expectation of detail and back-up evidence, will guide the evaluation of preliminary proposals. In the cases of both preliminary and formal proposals, the conclusions and recommendations of outside experts will weigh heavily in the ultimate staff decisions. Of necessity, staff will also consider the need to select a group of studies whose individual outputs can be assembled into a coordinated, intelligible picture of CE and its problems.

The Foundation will select for award those formal proposals which offer the greatest total value in meeting the goals of the program. While the estimated total cost will be considered in determining which proposal offers the greatest value, the primary basis for selection will be the criteria listed below which are approximately equal in value. Proposals not meeting criterion 1, however, will be considered nonresponsive.

1. Does the proposed project (study, conference/workshop, or other activity) have a clearly defined objective that will contribute to better understanding of the particular aspect of CE addressed? Does it fall within the area indicated as of interest to CESE in FY 1978?
2. Have the proposers demonstrated knowledge of the area that is current and pertinent? Have they demonstratd awareness of prior work, and understanding of its implications as background for what is now proposed? How will the proposed work extend knowledge and understanding gained in previous work?
3. Is the plan proposed for moving toward the project's objective clearly stated, does it appear to be feasible and workable, and is it technically sound? Is there a more direct approach that might lead to the same end?
4. Is there a well-thought-out, reasonable, time-table for acomplishing the project objective, and are appropriate decision points clearly identified?
5. Are the duties of project personnel clearly identified, and are the individuals involved well qualified to carry out the roles assigned to them? Are the services

and conditions necessary to support project activities available?

6. Is there a reasonable and workable plan for dissemination of project results to appropriate potential user groups?
7. Are the costs of the project—salaries, services, and other expenses—reasonable and commensurate with the magnitude of the task to be undertaken?

ACCESS TO PEER REVIEW INFORMATION

After final decisions have been announced, the Foundation will, upon request, inform the project director of the reasons for its decision on a proposal. Verbatim copies of reviews, not including the identity of the reviewer, will be made available to prospective project directors upon specific request.

VI. OTHER INFORMATION

The following information is provided to facilitate project planning. Additional details on these and other topics are contained in the NSF Grant Policy Manual (NSF 77-47).*

PROJECT MONITORING AND EVALUATION

NSF uses a varity of techniques to monitor and evaluate project progress and outcomes. Individually tailored to each project, these techniques may include:

- Examination of progress reports.
- Site visits by NSF staff and consultants.
- Steering committees established by NSF to oversee project progress.
- Ad hoc panels convened to assess progress or products.

Proposers should be aware that the Foundation may, as a part of its own program evaluation activities, carry out in-depth evaluations of selected awarded projects through independent third parties. Thus, proposers should be prepard to cooperate with evaluators retained by the Foundation.

REPORTS

Although interim technical progress reports may be brief and informal, they should cover progress to date and indicate how it compares with the approved project schedule. Problems related to project objectives, procedures, personnel or administration and recommended changes and solutions should be discussed. Interim technical reports should be submittd to the cognizant NSF program manager.

Final technical and fiscal reports must be filed within ninety days following termination of the grant. The technical report should include a narrative portion describing the specific progress achieved through the grant (both in absolute terms and in comparison with that anticipated in the approved proposal): the impact of the project on the group for which it was designed: and the status of dissemination efforts. The Foundation especially solicits candid appraisals of the difficulties encountered during the project, as well as ideas which might aid Foundation staff and other grantees in dealing with similar problems.

The original and two copies of the final fiscal and technical reports should be mailed to:

Division of Grants and Contracts
National Science Foundation
Washington, D.C. 20550

See Important Notice No. 62 for additional report requirement details.

CHANGES IN PROJECT OPERATION

Although major changes in the conduct of the project may be proposed at any time, changes in the scope, objectives, and professional personnel of the project must be approved in advance by the Foundation. Requests should be addressed to the cognizant program manager.

* Additional copies of the complete NSF *Grant Policy Manual* are available only by subscription, $12.00 domestic and $15.00 foreign, offered by the Superintendent of Documents, Government Printing Office, Washington, D.C. 20402. The *Manual* is identified by NSF 77-47, and was not assigned a GPO number. The *Manual* is in looseleaf form for periodic updating through supplements, which will be available only through a GPO subscription.

TIME EXTENSIONS

When circumstances delay the work, a no-cost extension may be requested. This request, along with a justification, must be received at least forty-five days before the award expiration date, contain the signatures of both the project director and the authorized institutional representative, and include a summary of progress, a budget for use of the remaining funds, and plans to complete the project.

DISTRIBUTION ARRANGEMENTS AND ROYALTY INCOME

Prior to publication or distribution of any book/materials supported under this grant, the grantee shall submit to the Foundation for its approval a publication or distribution plan which should inlude details on who is to be contacted, means and criteria for selection, pricing and estimated market. In addition, any publication or distribution agreement must be approved in advance by NSF.

APPLICANT ORGANIZATION AND MANAGEMENT INFORMATION

If your organization has not received an NSF grant within the last two years, please fill out the applicant organization and management card on the back cover of the brochure and attach it to the original copy of your proposal.

ACKNOWLEDGEMENT

An aknowledgement of NSF support must be made in connection with the publication of any material based on or developed under a project supported by NSF to the effect that : "This (material) was prepared with the support of National Science Foundation Grant No._____"

DISCLAIMER

Any materials, books, monographs, proceedings of symposia, or similar publications supported by an NSF grant must contain a statement, immediately following the aknowledgement, that contains an expression of the following: "Any opinions, findings, conclusions or recommendations expressed (herein) are those of the author(s) and do not necessarily reflect the views of the National Science Foundation."

ASSURANCE OF COMPLIANCE WITH CIVIL RIGHTS ACT

If the applicant university or college has not filed an Assurance of Compliance with Title VI of the Civil Rights Act of 1964, as required by NSF regulations, pertinent forms and a copy of the regulations may be obtained by writing to:

Division of Grants and Contracts
National Science Foundation
Washington, D.C. 20550

CONFIDENTIAL ASPECTS OF PROPOSALS AND AWARDS

When a proposal results in a grant, it becomes a part of the record of the Foundation's transactions, available to the public upon specific request. Information that the Foundation and the grantee mutually agree to be of a privileged nature will be held in confidence to the extent permitted by law. Therefore, any information that the applicant wishes to have the Foundation consider as privileged should be clearly marked as such and sent in a separate statement, two copies of which should accompany the proposal.

A proposal that does not result in a grant may be retained by the Foundation. Such a proposal will be released only: (1) with the consent of the proposer; or (2) to the extent required by law. A proposal may be withdrawn from further consideration at any time prior to final action thereon by the Foundation.

SUBCONTRACTS

Excluding the purchase of commercially available supplies, materials, equipment or general support services allowable under the grant, none of the research or substantive effort under an NSF grant may be subcontracted, subgranted or otherwise transferred to another organization without prior NSF approval. Thus, the intent to so contract must be fully explained in the proposal. Only the total amount of the subcontracts need be shown on the Summary Budget. Each subcontract, however, must display its own sub-budget separately.

EVALUATION

It is the policy of the NSF to provide support necessary for appropriate evaluation of educational materials produced by its projects. Such evaluation should provide unbiased and

reliable information concerning the extent to which educational materials achieve the objectives stated for them and such matters as how the materials might best be used, the soundness of their scientific content, their educational effectivness and limitaions, and costs of replication and continuing use.

COVER SHEET **APPENDIX A** SEDR/CESE

CONTINUING EDUCATION

PRELIMINARY PROPOSAL FOR ☐ STUDY ☐ CONFERENCE WORKSHOP ☐ OTHER

IN THE AREA OF ☐ ENGINEERING ☐ SCIENCE ☐ BOTH E&S

Title of Project (Limit to 12 Words)

Institution or Organization

Street Address City State Zip Code

Prof
Dr
Mr
Ms

Project Director Social Security No.*

Title, or Unit of Institution or Organization named above

Date of Submission Signature of Project Director

Estimated duration (months) $ Estimated amount to be requested

* Social Security numbers are used by the Foundation to monitor and facilitate the processing of numerous proposals, and to maintain award data. The number is solicited pursuant to the general authority of the Foundation under the NSF Act of 1950 as amended. Submission of social security number is voluntary and refusal to disclose a social security number will not affect an institution's eligibility for award.

COVER SHEET

APPENDIX B

SEDR/CESE

CONTINUING EDUCATION

FORMAL PROPOSAL FOR ☐ STUDY ☐ CONFERENCE WORKSHOP ☐ OTHER

☐ ENGINEERING
☐ SCIENCE
☐ BOTH E & S

1. Descriptive Title of Project: _____
(Maximum: 12 words)
_____

2. Institution or Organization: _____
Address: City _____ State _____ Zip Code _____
Grant to: _____
(Official name of organization to which grant should be made)

3. Project Director: _____ Social Security No.* _____
(One only)
Title and Academic Address
Department: _____
City _____ State _____ Zip Code _____
Telephone (Include area code): _____ _____
(Office) (Home)

4. Discipline(s) involved in project: _____
_____

5. a. Starting date of project: _____
b. Proposed duration of complete project: _____ months

6. Total amount of this request from NSF: $ _____

7. Grant number(s) of other NSF projects for which project director is responsible:
_____

8. Type of proposal ☐ New ☐ Renewal of Grant No. _____

9. Indicate if proposal has been or will be submitted in whole or in part to other possible sponsors, including NSF or other Federal agencies. (Such information will not prejudice review by the Foundation.) _____
_____

10. _____ _____
Signature of proposed Project Director Signature of Authorizing Officer

_____ _____
Date of Submission Typed Name & Title of officer authorized to sign for institution or organization

*Social security numbers are used by the Foundation to monitor and facilitate the processing of numerous proposals, and to maintain award date. The number is solicited pursuant to the general authority of the Foundation under the NSF Act of 1950 as amended. Submission of social security numbers is voluntary and refusal to disclose a social security number will not affect an institution's eligibility for award.

APPENDIX C

NATIONAL SCIENCE FOUNDATION

PROJECT SUMMARY

NSF AWARD NO.

NAME OF INSTITUTION (NSF DIRECTORY NAME)		ADDRESS OF INSTITUTION (INCLUDE BRANCH/CAMPUS & COMPONENT)
PRINCIPAL INVESTIGATOR		DIVISION (OFFICE) AND DIRECTORATE Science Education Development & Research
		SECTION
PROPOSAL NUMBER	FISCAL YEAR	PROGRAM Continuing Education
TITLE OF PROJECT		
SUMMARY OF PROPOSED WORK (LIMIT TO 22 PICA OR 18 ELITE TYPEWRITTEN LINES)		

PROGRAM APPROVAL	DATE

INSTRUCTIONS FOR USE

1. Program Office will complete all items appearing on the first copy; place Proposal Folder copy in the folder; retain Program Suspense copy; and place other copies inside the folder envelope with carbons intact.
2. Division of Grants and Contracts will post award number, amount granted and inclusive project dates on copies 3 through 7 and distribute these copies.

1. PROPOSAL FOLDER

APPENDIX D

SAMPLE FUNCTIONAL BUDGET (Studies)* SEDR/CESE

Function	Staff Costs	Other Costs	Total Costs
DIRECT COSTS			
A. Project Administration and Management			
1. Coordination of project staff and activities			
2. Fiscal and other management			
3. Preparation of project reports, correspondence and communications			
B. Project Activities			
1. Analysis of literature, reports and communications			
2. Preparation of instrumentation			
3. Field testing materials			
4. Data collection			
5. Data reduction and analysis			
C. Dissemination Activities			
1. Preparation of articles, papers, or reports			
2. Conducting workshops or orientation services			
3. Coordinating materials publication and/or distribution			
D. Other			
INDIRECT COSTS			
TOTAL			

*Design of functional budget for conference/workshop or other project is the responsibility of proposed project director.

APPENDIX E

SUMMARY
PROPOSAL BUDGET

ORGANIZATION AND ADDRESS	FOR NSF USE ONLY PROPOSAL NO.
PRINCIPAL INVESTIGATOR/PROJECT DIRECTOR	DURATION (MONTHS) PROPOSED / REVISED

NSF USE	A. SENIOR PERSONNEL (LIST BY NAME; SHOW NUMBERS OF PEOPLE IN BRACKETS; SALARY AMOUNTS MAY BE LISTED ON SEPARATE SCHEDULE) GPM 205.1b	NSF FUNDED MAN MONTHS CAL.	ACAD.	SUMR.	FUNDS REQUESTED BY PROPOSER	FUNDS GRANTED BY NSF (IF DIFFERENT)
	1. P.I./P.D.				$	$
	2. CO P.I./P.D.				$	$
	3. CO P.I./P.D.				$	$
	4. CO P.I./P.D.				$	$
	5. CO P.I./P.D.				$	$
11115	6. ( ) ← SUBTOTALS A1 - A5 →				$	$
	FACULTY AND OTHER SENIOR ASSOCIATES (ATTACH EXTRA SHEET IF NECESSARY)					
	7.				$	$
	8.				$	$
	9.				$	$
	10.				$	$
	11.				$	$
11117	12. ( ) ← SUBTOTALS A7 - A11 →				$	$
	B. OTHER PERSONNEL (LIST NUMBERS IN BRACKETS)					
11141	1. ( ) POSTDOCTORAL ASSOCIATES				$	$
11149	2. ( ) OTHER PROFESSIONALS				$	$
11150	3. ( ) GRADUATE STUDENTS				$	$
11152	4. ( ) UNDERGRADUATE STUDENTS				$	$
11182	5. ( ) SECRETARIAL - CLERICAL				$	$
11183	6. ( ) TECHNICAL, SHOP, OTHER				$	$
	TOTAL SALARIES AND WAGES (A+B)				$	$
11200	C. FRINGE BENEFITS (IF CHARGED AS DIRECT COSTS)				$	$
	TOTAL SALARIES, WAGES AND FRINGE BENEFITS (A+B+C)				$	$
	D. EQUIPMENT (LIST ITEMS AND DOLLAR AMOUNTS FOR EACH ITEM)					
23181	TOTAL EQUIPMENT				$	$
	E. MATERIALS AND SUPPLIES					
32630					$	$
	F. DOMESTIC TRAVEL					
42111					$	$
	G. FOREIGN TRAVEL (LIST DESTINATION AND AMOUNT FOR EACH TRIP; GPM 731)					
42112					$	$

CANCELS NSF FORMS 98, 138, 569 AND 633 EFFECTIVE 10-1-77

SUMMARY PROPOSAL BUDGET

PROPOSAL NO.

52500	H. PUBLICATION COSTS/PAGE CHARGES	$	$
62315	I. COMPUTER (ADPE) SERVICES	$	$
	J. CONSULTANT SERVICES (IDENTIFY CONSULTANTS BY NAME AND AMOUNT; GPM 516)		
	K. PARTICIPANT SUPPORT COSTS, IF ALLOWED BY PROGRAM GUIDE (ITEMIZE) GPM 518	$	$
	1. STIPENDS $		
	2. TRAVEL $		
	3. SUBSISTENCE $		
	4. OTHER - SPECIFY $		
	5. TOTAL PARTICIPANT COSTS (K1 + K2 + K3 + K4) $		
	L. ALL OTHER DIRECT COSTS (List items and dollar amounts. Details of subcontracts, including work statements and budget, should be explained in full in proposal.)	$	$
	$		
	$		
	$		
65001	TOTAL OTHER DIRECT COSTS $		
	M. TOTAL DIRECT COSTS (A THROUGH L)	$	$
	N. INDIRECT COSTS (Specify rate(s) and base(s) for on/off campus activity. Where both are involved, identify itemized costs included in on/off campus bases in remarks.)	$	$
74100	TOTAL INDIRECT COSTS		
	O. TOTAL DIRECT AND INDIRECT COSTS (M + N)	$	$
74500	P. LESS RESIDUAL FUNDS (If for further support of current project; GPM 252 and 253)	$	$
75000	Q. AMOUNT OF THIS REQUEST (O MINUS P)	$	$

REMARKS

NOTE: SIGNATURES REQUIRED ONLY FOR REVISED BUDGET (GPM 233). THIS IS REVISION NO.

SIGNATURE OF PRINCIPAL INVESTIGATOR/PROJECT DIRECTOR	DATE OF SIGNATURE	TYPED OR PRINTED NAME AND TITLE
SIGNATURE OF AUTHORIZED ORGANIZATIONAL REPRESENTATIVE	DATE OF SIGNATURE	TYPED OR PRINTED NAME AND TITLE

FOR NSF USE ONLY

INDIRECT COST RATE VERIFICATION			PROGRAM OFFICER APPROVAL
Date Checked	Date of Rate Sheet	Signature	

Grant Number	Amend No.	Institution	Organization	Fund Acct.	Program	Object	
	Proposal Number	Dur.	Chg.	Award Date	Proposed Amount	Prop. Dur.	

PAGE 2 OF 2 PAGES

APPLICANT MANAGEMENT AND ORGANIZATION CARD

TO BE FILLED OUT BY THE NATIONAL SCIENCE FOUNDATION

Date Received _____ **Proposal Number** _____

TO BE FILLED OUT BY THE PROPOSER

Name of Institution _____

Name of Project Director _____

Name of Director of
Sponsored Programs (or equivalent) _____

Telephone Number _____

Note: To be completed only if the proposing organization has not received an NSF grant within the previous two years.

APPLICANT MANAGEMENT AND ORGANIZATION CARD

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INTENT TO SUBMIT PROPOSAL

Program: _____

- ☐ Study
- ☐ Engineering
- ☐ Conference Workshop
- ☐ Science
- ☐ Expt/Proto.
- ☐ Both E&S

Principal Investigator: _____

Organization Affiliation and Address _____

ACKNOWLEDGEMENT

TO BE FILLED OUT BY THE NATIONAL SCIENCE FOUNDATION

Date Received _____ **Proposal Number** _____

TO BE FILLED OUT BY THE PROPOSER:

Program Title: Continuing Education for S&E

Institution: _____

Project Director: _____

INTENT TO SUBMIT PROPOSAL

Program: _____

- ☐ Study
- ☐ Engineering
- ☐ Conference Workshop
- ☐ Science
- ☐ Expt/Proto.
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Project Director: _____

ACKNOWLEDGEMENT

TO BE FILLED OUT BY THE NATIONAL SCIENCE FOUNDATION

Date Received _____ **Proposal Number** _____

TO BE FILLED OUT BY THE PROPOSER:

Program Title: Continuing Education for S&E

Institution: _____

Project Director: _____

1) Complete and return one "Intent to Submit" card

2) Complete two Acknowledgement cards and attach them to the Signature Copy of the proposal. Return address one to the official authorized to sign the Cover Sheet, and the other to the Project Director. The assigned proposal number will be used in future correspondence on the proposal.

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